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ON ANCIENT LIGHTS.



ON ANCIENT LIGHTS,

AND

THE EVIDENCE OF SURVEYORS THEREON.

WITH TABLES FOR THE MEASUREMENT OF
OBSTRUCTIONS.

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I N D E X.



INTRODUCTORY REMARKS.

Unsatisfactory position of the subject	Page	1
Surveyor's evidence must supply "the facts"		2
These ought to be capable of proof		2
The Surveyor's functions in Light cases		3
Programme of this Treatise, namely—		
1. The question of Law		4
2. The use and value of Lighting		5
3. The measurement of Lighting, and the importance of such means of Proof		5

PART I.—THE RATIONALE OF THE LAW OF ANCIENT LIGHTS.

Principles of the Law of Easements	7
Origin of an Easement, and legal theory of permission	8
Theory of proof of the supposed permission	9
Length of the period of enjoyment; the Prescription Act; its practical bearing; twenty years' possession	10
Ancient custom of the City of London	10
Rules defining the right of lighting, namely—	
1. The actual enjoyment of a necessary	11
2. The twenty continuous years	11
3. The enjoyed amount alone protected	11
4. The diminution must be ordinarily considerable	11
5. Enjoyment limited to the precise purpose	12
6. This to be the actual twenty years' purpose	12
7. Unreasonable exactions discouraged	12
The mode of establishing an Easement of light	12
Popular error as to restraining a neighbour in building	14
To prevent the establishment of an Easement of light	15

The requisite period of interruption	Page 17
The adoption of a written understanding	17
Extinguishment of the Easement	18
Loss of Ancient Lights by alteration thereof	18
Reclamation	19
Obstruction of an Easement generally	20
Obstruction of an Ancient Light	20

PART II.—THE EMPLOYMENT OF WINDOW-LIGHTING, AND THE CLASSIFICATION OF LIGHTS.

The nature of light; diffused daylight; the description here involved	22
The beneficial value of light according to circumstances	23
Classification of Lights, namely—	
Upright Lights and Level Lights	24
Combined Lights; Cove Lights	25
Exceptional cases: Lantern Lights	26
Exposed Lights and Confined Lights	26
Lights, open, glazed, obscured, obstructed	27
The purpose: the dwelling-house standard	27
Cases below the standard; and above it	28
Atmospheric influences, namely—	
The seasons: Winter time the standard	29
The weather: dull weather the standard	30
Time of day: the decline of day the standard	30
Aspect: westward the standard	31
Classification of obstructions	32

PART III.—THE MEASUREMENT OF WINDOW-LIGHT, AND PROOF OF ITS DIMINUTION AND DAMAGE.

Statement of the problem	35
Figure I. Plan of wall-window lighting, and results	35
Figure II. Section of the same, and results	37
Combination of these results	38
<i>Table of lighting for a wall-window</i>	39
Seeming defects thereof explained	40
The case of skylights	41
<i>Table of lighting for a skylight</i>	42
Application of these tables to the case of an Easement	43
Estimate of the standard minimum of necessary lighting for a wall-window	44
Illustrations of calculation for cases of obstruction	46

Estimate of the standard minimum of necessary lighting for a skylight	Page 47
Illustrations of calculation for cases of obstruction	49
Explanations affecting the application of these rules, namely—	
Position of a light internally	50
Exceptional cases	50
Fractional difficulties	51
Effect of distance	51
Reflection of light from an opposite wall	51
Aspect	52
Diagrams	54
Variety in the purpose or use of lighting, and commercial value accordingly	54
The readjustment of obstructed lights by consent	55

ON ANCIENT LIGHTS.

INTRODUCTORY REMARKS.

QUESTIONS of Ancient Lights occupy at this moment a most important position with reference to building enterprise in large towns, and most of all in London. As the value of house property has increased, disputes of this class have become more common than ever, more difficult of settlement, and more expensive. Serious complaints are made in all quarters,—on the one hand, that vexatious litigants are permitted by frivolous technicalities to hamper improvement where improvement ought most to be encouraged; on the other, that bold speculators are able to override the rights of less wealthy and more timid neighbours, the very class who most require protection. Demands are made for legislative interference; and even Chancery judges confess themselves bewildered in the subtleties of pleading, and the conflict of interests equally entitled, not merely to legal respect, but to personal sympathy. And yet the law as it stands has so stood, in one form or another, from the most remote ages, and in all intelligent communities; so that the call for amendment has to be

met with the rejoinder, whether the fault may not be less in the law itself than in some incident of its administration.

The author of this tract, as a Surveyor well acquainted with Light cases practically, ventures to think that the fault lies in the defective nature of Surveyor's Evidence, and not in the law at all.

Now, what is Surveyor's Evidence? In all litigation the basis of judgment must be what are called "the facts." If the facts are misrepresented, the judge cannot be responsible for his decision, and the law cannot be responsible for its justice. Lawyers will supply the reasoning, but they must be supplied with the facts. The facts of Light cases then are supplied by the Surveyors. It is upon their statements alone that the law is capable of being applied. They make oath and declare, as experts, that certain lighting will be "materially diminished;" or that it will not be so; and, in reality, these statements have to do duty for "the facts." And when half a dozen surveyors on one side swear one thing, and another half-dozen on the other side swear quite another thing, and all in the most empirical and dogmatic way, not only not assigning reasons, but positively withholding reasons by prudential rule, can it be wondered at that on such a basis of "facts" the law should find itself at a loss?

Surely it seems reasonable to suggest that all opinions of the kind ought to be matter of intelligible proof,—that they ought not to be ventured upon unless arrived at by such proof. The author there-

fore respectfully offers to his brethren, and to other persons interested, what he thinks will afford the means of proof, so that their opinions may be both definite and intelligible; and he ventures to think that, if Surveyor's Evidence can be made all it might be in these respects, the public will find little to complain of in the state of the law.

The functions of the Surveyor in Light cases are briefly these :—

1. He brings to his task the knowledge of an expert. This is of course primarily founded upon his experience as an architect in the designing of buildings, and amongst other things especially with reference to their lighting. But in addition he understands the practical bearings of the Law of Easements, and this again with special reference to lighting.

2. He proceeds to discover the nature and to define the extent of whatever injury may be threatened; and it is the argument of the present tract that he should take pains to reduce his opinions to proof.

3. If an adjustment of the conflicting interests seems possible, he is the proper person to suggest the means. (And there is not one case in fifty that may not be so adjusted by surveyors.)

4. But if litigation is to be relied upon, his province is limited to offering his best advice to his client or his legal agent, and giving evidence in support of his opinions, and in reply perhaps to

those of others. Still, however, he may have to take a certain amount of responsible charge of the suit, in order to direct the legal proceedings to a practical issue; because, if there be any class of cases more than another in which abstract law must consent ultimately to bow to concrete circumstances, it is in matters of Easements.

In accordance with the ideas thus expressed, this little treatise is of three parts, namely,—

- I. The rationale of the law of Ancient Lights.
- II. The employment of Window-lighting, and the classification of Lights.
- III. The measurement of Window-light, and the proof of its diminution and damage.

In the first part we can only pretend to set forth a concise statement of the practical bearings of the law, upon that view of the question which it is the surveyor's province to take, leaving legal technicalities to legal hands. But thus far something like a correct appreciation of the principles of the law is in fact essential to him, so that he may direct his investigations to a proper end, such as the law will recognise; for otherwise he will run the risk of wasting his professional intelligence upon a false issue, as indeed many a one has done. He must be asked, therefore, to look at the origin of Easements of Light theoretically and practically, and at the law's precise impression of them, that he may see the justice of this impression, and meet its demands with

ready acquiescence ; because, if he should be unwilling to do so, it is most probably for want of better knowledge.

In the second part of our essay, we must prepare the way for the third by entering into the consideration of the nature of the use and commercial value of window-light, and its classification into several varieties of practical character, which will be easily understood and acknowledged when pointed out. Here also we may enter upon a brief classification of obstructions, such as become most commonly the subject of investigation.

In the third and last part the author has to submit tables of valuation for the measurement of window-light, and suggestions for their employment in practice. There may, perhaps, be differences of opinion respecting the data on which these tables are based ; but this is a circumstance that cannot be helped, and the investigator is at any rate distinctly furnished with the entire process of argument involved, so that he may calculate for himself. It is manifest, however, that, if such tables can be accepted, they must go a great way towards providing surveyors with those means of proof, the want of which at present renders their evidence so unsatisfactory as “ facts.”

Whether the introduction of a system such as we propose would benefit the cause of the plaintiffs or that of the defendants in the claims which are now so common and often so vague in their merits, is a question which has not entered into the author's scheme ; of one thing, however, his experience of

such affairs has enabled him to become thoroughly convinced,—that, as a rule, although an Englishman always wishes to protect himself, he seldom wishes to overreach his neighbour, especially in such a matter as an Easement; and it may be safely affirmed that, in the vast majority of Light cases, it is only *proof* that is needed to satisfy both sides.

PART I.

THE RATIONALE OF THE LAW OF ANCIENT LIGHTS.

QUESTIONS of Ancient Lights turn primarily on the Law of Easements.

The principles which lie at the root of the Law of Easements seem to be these :—first, that the rights of individual possession over any particular piece of land, although theoretically uncontrolled, cannot practically be free from subjection to the *natural necessities* of neighbouring possessions ; and secondly, that, in the way in which this principle now applies, these natural necessities of neighbouring possessions must be accepted in the shape of *necessary privileges established by reason of long enjoyment thereof*. Amongst the most simple instances are rights of way in the country across a neighbour's land, and rights of drainage through a neighbour's ditches ; but in towns there arise much more subtle and complicated cases, and perhaps the most difficult of all are those referring to our present subject of Ancient Lights.

When a dispute arises about an easement of this kind, the question stands generally thus : the claimant of the easement, being the possessor of what is called the *Dominant* property (or that to which the privilege belongs), complains that the possessor

of the *Servient* property (or that on which the permission of such privilege is imposed) has obstructed the easement in question,—say he has heightened his wall, and thus partially obstructed the lighting of his neighbour's window,—whereby, in benefiting his own property, he has caused his neighbour's property to suffer a loss, namely, the definite and substantial loss of the necessary lighting in question. In other words, the plaintiff alleges that he has hitherto possessed his property with this privilege attached to its enjoyment as an essential feature thereof, and that he cannot part with such privilege without damage to the value of his possession. To which the neighbour replies, perhaps, that such privilege over his property has not been enjoyed as alleged; or that it has been abandoned, or surrendered, or otherwise extinguished; or that it has not been a thing of essential necessity; or that it has been obtained by fraud; or that the enjoyment of it is not at all affected by his operations, or, if at all, inconsiderably; and so on. It thus becomes important to know what footing such privileges are considered by the law to rest upon.

Confining ourselves to our subject of light, the simplest form of origin for the easement is when two properties are found to have been originally one, the subsequent separation having been effected without disturbing a certain essential dependency of the one moiety upon the other for necessary lighting. Or otherwise, the owners, present or past, of the two properties, may be found to have specifically established the privilege by bargain. Or, again, it may

merely appear obvious that the dominant owner has obtained the privilege by permission of the servient. Or he may avowedly have taken it by usurpation,—unresisted, because very probably it seemed a matter of too little moment for his neighbour to take notice of, or because both parties were ignorant of the legal bearings of the proceeding. But in all cases the law appears to look at the privilege as a thing existing by a definite understanding between the parties, whether expressed or not. In fact, this is probably the only way in which to avoid the adoption of some theory founded upon the principle of mutual accommodation as a sort of generally acknowledged right of neighbourship—an idea which, although probably nearer the truth in most cases, would obviously involve a multitude of subtleties not so easily dealt with.

How then is this right of easement by such an understanding between the parties considered to be provable? Of course it is very seldom that any express agreement in writing can be referred to, unless it be in cases where the very existence of such a document prevents dispute;—at all events, it is plain that Ancient Lights in towns must stand upon some very different basis than a written, or even verbal agreement. The only resource is to accept the constructive understanding involved in the long enjoyment of a necessary. That is to say, the Dominant possessor proves his privilege to be a necessary; and his enjoyment of it to be established by long use, undisturbed by the Servient; and the law consents to be satisfied that this is proof of some understanding

having been had at some time or other—no matter what understanding, and no matter when—by which the Servient is bound not to disturb the privilege.

The question, then, turns upon the length of the term of enjoyment; and up to a comparatively recent date the term required to be proved for the establishment of the easement was time immemorial, for which the testimony of what may be called “the oldest inhabitant” was accepted. But by the Act 2 and 3 William IV., cap. 71, called the Prescription Act, it was determined that, in future, certain definite terms of years should be accepted,—in cases of house-light, twenty years. The practical bearing of this usually is, that, if a window can be proved to have received light over a neighbouring property for the last twenty years, the owner of the neighbouring property must not deprive it of any necessary part of its light by his operations on his own property, no matter what his own necessities may be. The words of the Act are—“When the access and use of light to and for any dwelling-house, workshop, or other building, shall have been actually enjoyed therewith for the full period of twenty years, without interruption, the right thereto shall be deemed absolute and indefeasible, any local usage or custom to the contrary notwithstanding,* unless it shall appear that the same was enjoyed by some consent or agreement expressly

* The ancient custom of the City of London, for example, permitted a new wall to be carried up to any excess of height, provided it stood on the old foundation, and provided there was no agreement in writing to the contrary. This custom, however, is obviously now set aside.

made or given for that purpose by deed or writing" (in which case, obviously, the agreement would explain itself).

To define precisely what is the right of lighting here involved, the following rules are to be remembered:—

1. It must be lighting "actually enjoyed,"—really made use of beneficially as a necessary—the loss of which would be a tangible deprivation to the building; that is to say, the window in question must be necessary to the house, and the particular lighting in question necessary to the window. The law will not enforce any restriction upon the servient property except for a tangible and essential benefit to the dominant.

2. The privilege must have been enjoyed for twenty continuous years immediately past, without any abandonment except for a temporary purpose.

3. It is the necessary, the "actually enjoyed" amount of lighting, which must not be diminished; any unnecessary or unenjoyed surplus may be obstructed without wrong.

4. The diminution must be of such extent as to be sensibly appreciable by ordinary persons; not speculative or theoretical, but practically apparent both in kind and degree—what the law calls "a material," or "substantial," or "considerable" obstruction, not even recognizing any personal peculiarity, far less any eccentricity or caprice, of the complainant's, but looking strictly to ordinary uses and purposes of the particular kind in question, judged by the standard of ordinary apprehension.

5. The enjoyment of the lighting is limited by the precise purpose served by the window; for instance, whether to light a cellar, where but little illumination is needed,—or to show delicate goods in a sale-room, where the requirements may be extremely fastidious.

6. The particular purpose for which the lighting is claimed must be limited to that purpose, or its equivalent, for which the twenty years' enjoyment has been continuously possessed; for instance, an apartment used originally as a dwelling-room, and converted into a sale-room within twenty years, is only entitled to sufficient light for a dwelling-room.

7. The bias of the law leans towards the Servient property; so that the Dominant proprietor is expected to be reasonable and considerate in the enforcement of his privilege. Indeed, to a certain extent, the Courts will take into account the comparative importance of the conflicting claims,—on the Servient side, perhaps, a great commercial enterprise, and on the Dominant side possibly a purpose of little real value.

We may next consider the mode of Establishing an easement of light; the mode of Preventing its establishment by Interruption; the process of its Extinguishment; that of its Reclamation; and the further definition and illustration of what is its Obstruction.

Subject to correction by lawyers in what may be the particular circumstances of any case, we may say generally that by the Act of William IV. it matters nothing whether the easement has been originally obtained by fraud or even force, whether it has been used openly or covertly, whether the Servient owner has been aware or unaware of its existence, provided only it has been used for twenty years last past. Accordingly, it would seem that all that any one has to do in order to establish an Ancient Light is to take advantage of his neighbour's ignorance of the law, or obtuseness, or indolence, or neighbourly goodwill, or dread of litigation, and so induce him to submit to the formation of some little window, perfectly harmless at the time of its being made, and in no way trespassing upon or affecting, otherwise than by way of look-out, anything beyond the limits of its owner's own property ; but destined perhaps, twenty years afterwards, to become the ground upon which an absolute prohibition shall issue against the rebuilding of his premises except in the obsolete and unprofitable form of the original structure. But more than this, as every architect knows, amongst the crowded disposition of properties in large towns, there are many ways in which a window, or skylight, or what not of the kind, has been formed in a position which renders objection to it clearly impossible, and yet it has become after the prescribed interval an established easement over property of many times the value of its own, carrying with it indeed, indirectly perhaps, a large share of the actual selling

price of that property. Such, for instance, may be the side window of an insignificant outbuilding which sometimes in a manner rakes the back wall of the adjoining property so as to prevent all extension rearward; a side-lighted window, again, in an obscure corner, whose inadequate light is only the strongest reason why none of it should be sacrificed; and, beyond all, perhaps, a skylight in a back shop used as a sale-room, with perhaps three or four large properties around it kept down to a most inconvenient angle for its sole accommodation.

It is very seldom, of course, that an easement of light is actually created with a view to such consequences; but these hints may be of service by impressing the general reader, and even the surveyor, with the serious character which an encroachment of the kind may unwittingly be allowed to acquire, and by illustrating forcibly the principle that, however clearly the fact may be ascertained of its being in its origin an encroachment and nothing else, for which no compensating consideration ever passed, yet the law does not, and apparently cannot, take any other view of the case than that a privilege has been possessed from old time by reason of some presumed understanding which it would be unfair to disturb or even to question.

Here may be mentioned an erroneous impression which is found to prevail more extensively than might be supposed, and which is productive of much unnecessary controversy, especially amongst small tenants. The notion is that one is limited in respect

of building by the extent and form of his existing buildings; that he has no right to raise the party-wall beyond its former height, no right to project a new building beyond the former line, and so on; no right even to do such a thing as put up a fence on his own land which shuts out a neighbour's accustomed prospect beyond. This is of course an exaggeration of the law of easements; and however absurd it may appear to a lawyer, it is obviously a very natural consequence of the way in which the reports of the application of that law reach the public ear. However, that it is clearly wrong is apparent at a glance. The easement of light, which is the only ground upon which such imaginary restrictions are founded, goes no farther than has been explained, namely, to the restraining of the Servient, in dealing with his own property, from diminishing the amount of light actually received by the Dominant's windows, so as to reduce it materially below the limits of the established enjoyment thereof as a necessity of occupation. Except thus far, the Servient may do as he will with his own, in building as in all else.

How to prevent the establishment of an easement of light becomes a question of great practical interest. As an abstract rule, the answer would be that the resisting owner must, on his own ground, establish from time to time, at intervals of less than twenty years, some interruption or obstacle, corresponding to the nature of the easement, and equal to whatever necessity, in the way of building, is likely ever to arise on his own ground. But how to contrive such an

interruption, even to a window constantly before one's eyes, is seldom a simple point; and when the privilege set up, as is most commonly the case, has no application to the existing circumstances of the servient property, and is in fact a grievance of only the most remote and speculative bearing, it is extremely difficult to suggest any measure of redress, except some sort of general protest in writing could be devised to meet the technical principles of the law. But at any rate it is to be remembered that the right conferred upon an easement of light by the statute of William IV. exists only by twenty years' enjoyment thereof *without interruption*; and it may certainly be said that, if any means of interruption can be devised to suit any particular case in which the issue is sufficiently simple to admit of such a thing, it is well worth while to take a little pains to protect one's self against possible inconvenience. For example, when a neighbour cuts out a window in a wall abutting close upon my garden, the remedy is easy enough. Proceedings cannot be taken at law, as some imagine they can, for a trespass in respect of my neighbour overlooking my land; but I set up on my own land a screen of boards, or I build up a wall, purposely to shut out the light; and my neighbour dare not push down the obstruction, or otherwise challenge it, because his window has not been twenty years in existence, and therefore has no title to light from any land but his own. And accordingly, whenever any similarly simple measure can be resorted to, the redress will be equally sure. And as

it is well known that windows opened into neighbouring back-yards exist, as exacting and relentless easements, literally by the hundred in the City of London itself, merely because the neighbour did *not* set up a screen against them, it may readily be believed that in such cases, and in a certain class of cases which are more or less similar, there is a good deal of prevention which may be put in force now that the bearings of the question are being better understood by the public.

As regards the length of time during which the interruption ought to be maintained, so as to acquire legal value, the Act of William IV. seems to dictate the term of one year; no proceeding "shall be deemed an interruption unless submitted to or acquiesced in for one year;" so that one whole year in every twenty would seem to be the requisite length of time, and twenty continuous years of enjoyment including anything less than one year of interruption would thus suffice for establishing the easement.

But in cases where a new privilege of lighting is usurped, and the usurper is willing to acknowledge it to be so, a very ready means of preventing future misunderstanding is suggested by the Act of William IV. as already quoted. The right by reason of twenty years' enjoyment is only allowed in the absence of "consent or agreement expressly made or given by deed or writing;" so that, if the parties will concur in giving and taking express authority in writing, it is easy enough to settle beforehand the precise terms of an honourable understanding.

Extinguishment of Ancient Lights may happen in various ways. The easement may be definitely surrendered by agreement between the proprietors, either for a consideration or not. It may be lost by disuse, provided this be permanent in intention and extending over one year; as by pulling down the wall which contained the windows, and rebuilding it without windows. Interruption for one year, acquiesced in or not resisted, will have the same effect, so far as the interruption applies. Neglect for one year to resist an obstruction is in like manner sufficient to break the twenty years' continuity; so that proceedings in defence of ancient lights have to be taken promptly. Implied permission to obstruct is also recognised as an abandonment of the easement; as when the Servient owner obtains leave of the Dominant to make some permanent alteration with respect to the easement or its surroundings, and it is afterwards found that its efficiency is thereby impaired. Lastly, and of perhaps chief interest, is the principle that the owner of Ancient Lights may sacrifice his right to them by injudicious alterations of his own.

This loss of the easement by its alteration has only recently become a prominent idea; but the justice of the principle is easily perceived, and indeed the limits of its application. When an easement is established at law by mere presumption or constructive right, derived from the fact of enjoyment and nothing more, it is obviously most reasonable to require that the possessor of what may be called so

obnoxious a privilege should be made to confine it rigidly within the ancient limits of its identity. If he pulls down his old house, and within reasonable time builds a new one which contains the accustomed Lights in precisely their accustomed form, or in an equivalent form in every respect, or in a form less oppressive than before—position as an essential point being unaltered, and size not increased—he has but reinstated that which was his own. But if he takes the opportunity to make a further encroachment, in whatever shape, this additional easement becomes entirely separated in the eye of the law from the former privilege, and it has no protection till sanctified by its own twenty years of enjoyment. If, again, he extinguishes the old easement, and thinks to transfer his title to an equivalent in another position, he loses the old without gaining the new: the Servient neighbour has but to wait the prescribed year, and he may obstruct the new with impunity, when it has become too late to reclaim the old. And lastly, if old and new should have been so confused together as to be undistinguishable, the Servient possessor is not to be prevented thereby from protecting himself by obstructing the new, and the undistinguishable old must take its chance.

Reclamation of Ancient Lights would seem to be seldom practicable, except in this form,—that when their position has been altered in a new house, and the obstruction is offered forthwith, and favourably viewed by the Court, it would be reasonable to allow the Dominant owner to restore the ancient condition

of the easement, and so recover its possession, subject to the one year's limit of time.

Some further definition and illustration of the act of Obstruction is desirable here; because it is this which becomes in almost all cases the chief point for the surveyor's evidence. An easement, then, being a privilege legally possessed, an obstruction of that easement is any proceeding which prevents its enjoyment; the extent of such prevention being of course not imaginary but real—a tangible damage to a tangible possession. The wrong involved becomes in law a Nuisance. The party aggrieved may, with proper precautions, personally abate the nuisance, or remove the obstruction; or he may take proceedings for its abatement by the hand of the law; or he may submit to the injury and claim damages; or he may claim both abatement for the future and damages for the past; or he may pray for an injunction to prevent the obstruction from being continued or consummated. In every possible case of legal action he must define the privilege alleged to be infringed, prove his title to its possession, define the injury accomplished or threatened, prove the nature and extent of such injury, and on these tangible grounds alone claim definite redress.

What, then, is an Obstruction of an Ancient Light in particular? The nature of the right itself has been already explained; and the limitation of such right to the form of a necessity of occupation of twenty years' enjoyment. The obstruction of such an easement, accordingly, scarcely ever takes any

other form than this,—in a crowded town a building is increased, either in extent laterally or in height vertically, and so is considered to intercept the access of the light of day to a neighbour's window, to his consequent damage. The neighbour in effect pleads thus :—By that window I have hitherto received into my house from the atmosphere an amount of lighting which may be called say one hundred measures of lighting ; of this quantity I have always used (in a definite way to be accounted for) say seventy measures to my benefit, so that the enjoyment of seventy measures has become an essential necessary of the occupation of my house, and is therefore by law my property ; but the defendant obstructs (or intends to obstruct) the access of such lighting materially, for I shall receive but say fifty measures ; and thus I am to be by him permanently deprived of say twenty measures of lighting, which is my property ; and I claim the preservation of this twenty measures of lighting to my use, or compensation for its loss, as the case may be. The law has little more to do than to ascertain (the right being established) whether, by reason of the cause assigned, the amount of lighting hitherto used in the manner accounted for is, or is to be, so much lessened as to involve a substantial deprivation to the complainant ; if so, the obstruction is a nuisance.

PART II.

THE EMPLOYMENT OF WINDOW-LIGHTING, AND THE
CLASSIFICATION OF LIGHTS.

THE nature of Light, however difficult a question in science, is in practice correctly and thoroughly understood in this form,—that our Daylight is an agency coming to the earth in straight rays from the sun, and absorbed by material objects, reflected from them, and transmitted through them in certain ways which are familiar to us. Amongst other things, we know that it is transmitted through the atmosphere, and through its clouds and vapours, and particularly across the surface of the earth, not merely in lines straight from the sun, but in reflected lines of all directions from all quarters, called Diffused Light, in which the infinite maze of the illuminative influence acquires a movement which almost emulates the fluidity of the air itself. In fact, it is this diffused daylight which is constituted, by the express intent of Nature, the standard medium of human vision; for where there is one purpose of sight specially served by the direct and unobscured light of the sun, there must be a thousand for which the eye prefers the more genial agency of the diffused light of the atmosphere.

Diffused daylight therefore is the precise descrip-

tion of light with which we have here to deal. As regards that access thereof which we make use of, and in respect of which an easement arises, it may be said that we generally admit it into a house by windows or other such openings in the walls, and by dormer lights and skylights in the roof; although no doubt the lighting of a shed, for instance, admitted by the open front, and the lighting of an open yard received directly from the sky, would equally be recognised by the law as easements, if circumstances so required.

As regards the use which is made of the light—its value—the benefit, in a legal sense, of which one becomes possessed in its access—this is to be taken according to circumstances. In all cases the light admitted is simply the indispensable medium of vision; but the description of vision actually involved in the particular instance must govern the value of the benefit. In the absence of evidence to the contrary, the common standard of use applying to the purposes of an ordinary dwelling-house becomes the accepted rule; that is to say, the claimant of the easement is understood to claim that amount of necessary light which it would be capable of affording to an ordinary residential apartment. But if it should be proved that the use of the light has not applied to such residential purpose, but to some other definite purpose, either of greater or less importance, then the benefit is estimated according to this fact, so much above the dwelling-house standard, or below it, as the case may be: and inasmuch as the use of light

for vision is more or less essential to all possible purposes of building occupation (for even in a wine-cellar, an ice-house, or a water-tank, its utility is conceivable), the precise use and benefit attaching to the light, and the precise value of it as a possession, come to be measured simply by the idea of a continuance of the operations hitherto carried on by its means. For instance, if the light has been deficient in quantity for the particular operations in question, the value of it is its value as a defective thing; and if it has been superabundant in quantity for those particular operations, the use of it has been the use of only the necessary portion, and the surplus has not been used and has not been possessed.

We may now attempt a *Classification of Lights*; in doing which there will be no need to go beyond well-known and accepted types.

The common classes are—first, *Upright Lights*, and secondly, *Level Lights*; the former class comprising ordinary wall windows, dormer windows in the roof, and, generally, such as stand vertically or nearly so; and the latter class comprising skylights in their various forms, and generally such as look directly up to the zenith. There is an essential difference between these two classes in respect of the comparative quantity, and in a manner the quality, of the lighting which they receive; arising from the circumstance that the upright window is accessible chiefly to

atmospheric light moving more or less horizontally, whilst the skylight is accessible to atmospheric light moving vertically downwards,—the latter description of lighting being in quality more powerful (that is in quantity more abundant) than the other; besides which the difference of direction involves difference of illuminating character, in respect of the angle of reflection from the object illuminated to the eye of the spectator. It is consequently well known that there are certain purposes, in commerce especially, for which skylights are very highly valued,—as in the display of various kinds of textile goods, china and glass, and other delicate fabrics, and articles of taste; whilst, at the same time, there are equally important purposes for which common wall-lights are preferable, as for writing and other office work in most cases, and a large class of manipulations of workmanship wherein a light close in front of the hand is desired.

But there are other classes of Lights which it is well to distinguish besides these two. Thirdly, there are sometimes cases of *Combined wall-light and skylight*, where the qualities of both the two simple classes are specially valued, and where neither kind of lighting can be surrendered on the ground of the other kind being sufficient in quantity. Fourthly, again, we have *Sloping or Cove-lights*, purposely formed on a certain inclination between wall and ceiling, considered to be especially suitable for jewellery and other small and delicate objects in glass cases, as in museums.

It may also be noted in passing, that, although the characteristics of Wall-lights and Skylights respectively are usually well preserved, yet we sometimes meet with Wall-lights so placed close to the ceiling of a lofty apartment as to possess the character of Cove-lights; whilst again, we sometimes have Ceiling-lights so far removed from the middle of the room as to lose their value of vertical lighting, except immediately underneath. Lantern lights are obviously Skylights partially obstructed.

In all these classes alike there is, in the next place, the difference between the Light being in situation *Exposed*, and its being in situation *Confined*. A well-exposed light, as an easement, cannot claim to be continued as a well-exposed light, but may have to be content to lose the advantages of its exposure, provided the strictly necessary quantity of mere lighting power is preserved; and it is obvious that the more exposure a light possesses the more obstruction will it bear without damage. A confined light, on the other hand, must be more jealously guarded; for its lighting power may be so small, by reason of its situation, that it cannot spare a single ray of atmospheric lighting. In cases where reflectors have been used, provided the actual employment of the lighting has not been changed, this circumstance is especially good evidence that there is no lighting power to spare. The accustomed use of artificial lighting during the daytime must also be taken in the same way.

Another thing to be considered in the classifica-

tion of Lights is the precise degree of translucency attaching as matter of fact to their use. In this respect a Light may be either—1st. *Open*; 2nd. *Glazed*; 3rd. *Obscured*; or 4th. *Obstructed*: that is to say, looking especially at its appraisement as an easement, it must be obvious that there is a great difference involved in the question whether the lighting is received through—1st, an open aperture such as the front of a shed; or, 2nd, the ordinary glass of a window or skylight; or, 3rd, ground glass, or glass permanently obscured by dirt or otherwise; or whether, 4thly, it has been the rule to keep the lighting surface more or less diminished in size by closed shutters, panes of wood, &c., or by articles placed at random against the light—excepting, of course, all such things as goods displayed for show. The value of the easement must, in fact, be measured by the use that has been made of it; and the claimant who has systematically kept his window in such a condition as to indicate that he valued it very little, must not be surprised if others estimate its importance at his own valuation.

The particular purpose for which the lighting is used becomes a highly important matter of classification.

The standard purpose is that which attaches to the ordinary occupation of a dwelling-house, taking each particular apartment as one of its usual kind, according to its situation and actual use; whether, for instance, a cellar (either sunk or above ground), one of the domestic offices (either sunk or above ground), a dwelling-room, a bedroom, or a stair.

Purposes below this standard are those attaching to such places as stables and coach-houses, sheds for stowage, warehouses for stowage, cellarage for stowage, and the like.

The purposes of trade and commerce are above the standard ; as in the case of a shop or warehouse for the sale of goods, a workroom, a workshop, a sample-room, a showroom, a counting-house, an office for clerkship, and so on ; and such purposes as those of a professional room, a school, a church, a studio, a gallery of art, a reading-room, and so on, are of the same category. Of late years a very peculiar and novel use of light has been established, namely, its employment for photography ; and although time has not yet admitted of the establishment of easements for this purpose by prescriptive right, yet doubtless the law would fully recognise the particular kind of benefit involved.

In every case the precise use of the apartment lighted must obviously attach its own value to the use of the Light ; the more important the purpose in money value, the more valuable the lighting enjoyed.

The differences of *Atmospheric Influence* may next receive our attention, and first, the course of the *Seasons*. As a general rule, the damage to a Light is to be judged of with reference to the time when the amount of lighting power is lowest ; and in respect of the seasons it is clear that, as windows do not

dilate and contract, like the pupil of the eye, under the variations of the light, but must remain of one size whatever may be the brightness or the dimness of the atmosphere, if a window can spare any portion of its lighting at all, it can spare most in summer and least in winter. To put the case otherwise,—if the window could dilate and contract like the pupil of the eye, it would be at its smallest in summer and at its largest in winter; and if throughout the winter generally it were found to reach by dilation its utmost limit, it would be proof that it had nothing to spare, whilst, on the other hand, the extent to which its dilation fell short of the utmost limit would show the extent to which it could bear diminution. Once more,—as the partial obstruction of a Light is obviously equivalent to a diminution of its size, it is no answer to an allegation of damage to say that the loss is not apparent in summer; but it is an indisputable proof of the damage to show that the loss is felt in winter, and an indisputable disproof to show that the loss is not felt in winter. The winter, in a word, is the season in which to judge of the injury; and to all intents and purposes the inquiry may usually be confined to the winter. If what is here implied by the term winter were but an inconsiderable portion of the year, this conclusion would have to be amended to suit the principle that the law cannot look at inconsiderable or unsubstantial matters at all in respect of easements; and for the same reason anything like an exceptional winter, or exceptional days in winter generally, would be

deemed unworthy of notice ; but as the winter season is a very considerable and material portion of the year, there seems to be little risk in suggesting that, if winter lighting is substantially diminished, the substantiality of the damage is indisputably ascertained, although of course the question how far the damage extends into the other seasons (which, by the way, is only another form of the question, what is the extent of the damage in the winter) must duly enter into the estimate of the damage as matter of appraisement. It has only to be noted further, that, if in any peculiar case it is shown that the premises in question are not used in winter, the inquiry must turn upon the time of use the nearest approaching to winter ; and that, if it be shown that the loss in winter happens to be no criterion of the loss in summer, then the inquiry has to look at the summer damage directly.

The variations of *Weather* are to be similarly considered ; and just as ordinary winter-time is to be taken as a reasonable test, so also is ordinary dull weather,—ordinary for the same reason as before, that the law rejects exceptional circumstances. We note, moreover, that in our climate the condition of dull weather applies to a considerable portion of the year, and at all seasons, or otherwise the law would not be satisfied with this argument.

As regards *Time of Day*, we may so far follow the same line of thought as before, as to say that in ordinary cases it is the latter part of the afternoon that becomes the period of test. The case in fact assumes

now a particularly simple and practical form :—" You may diminish my lighting," says the owner of the easement, "in the morning, because I am not at work ; indeed, the sun is getting towards its highest while we call it still early in the day ; from noon till several hours after, the light is at its best, and I am well supplied ; but then comes the decline of the day, and I am still at work ; sunset, twilight even, and I am still at work ; so you must not diminish what little lighting I have in the decline of the day."

Aspect, lastly, is manifestly a thing of importance. It is true that the lighting we have to deal with is Diffused daylight, and that in even moderately dull weather, if only equably dull, its diffusion is so complete that all aspects are practically equal in respect of lighting power, so that the theory is not far from the truth which treats diffused daylight as light "reflected from the sky," and so reflected equally all around ; but nevertheless, as this theory obviously depends entirely upon the clouds being equably dense all around (indicated by the position of the sun being perfectly undiscernible), we may take leave to say that such a condition of the sky is not the prevailing character of ordinary dull weather, but that, as matter of fact easily proved by observation, the position of the sun, and especially perhaps towards evening, is most usually not undiscernible. And as the amount of lighting power in the atmosphere must indisputably be greater in the direction of the only source of light, it cannot be doubted that aspect ought to enter into the estimate of any obstruction,—

we need not say in any paramount way, but as a substantial consideration at the least. Accordingly, as eastward aspect applies to morning light, southward to noon, and westward to evening (the sun being due east at 6 A.M., due south at 12, and due west at 6 P.M.), it is plain that the decline of day referred to in the last paragraph as the test-time corresponds with the westward aspect (say from south-west to north-west, that is, from 3 P.M. in winter to 9 P.M. in summer) as the quarter on which the obstruction of light is to be dreaded chiefly, except in peculiar cases.

We may now proceed to some *classification* of the *Obstructions* most commonly occurring; and if we do not travel beyond the limits of ordinary cases of a *bonâ fide* character, this will be no very difficult task. It almost always happens that the servient owner, in rebuilding or altering his premises, desires either to make the building higher than before, or to advance it forward, whereby the dominant owner, when looking out through his Ancient Light, is to be deprived of part of his former view of the sky. This is the simple test first thought of; and the owner of the Light at once argues that, as the sky is equivalent to a vast reflector, from all quarters of which the lighting influence is projected through his window, any diminution of the extent of this reflecting surface is a diminution of the amount of his lighting,—which is

no doubt a correct principle. The two primary classes of obstructions, therefore, are obstructions by *heightening*, and obstructions by *advancing*; and it is only the various forms which these may take which can give rise to further classification,—the whole scheme, however, turning upon the general idea already mentioned, namely, the extent of the obstacle introduced between the light and the sky.

The simplest of all obstructions is that which is in front, more or less directly, of a Wall-light, and parallel thereto. The occasion may arise either by heightening or by advancing; and the extent of obstruction will depend upon its length and the increase of the angle of elevation of its summit. Another common form is that in which the obstruction is at the side, at right angles, more or less, to the face of the window; whether arising by heightening, advancing, or lengthening. The angle of elevation of the summit and the extent of length are still the questions to be considered. Between these two as extremes, there are of course an indefinite variety of cases as regards the angle formed by the obstruction with the window, and the particular outline of the obstruction; but no need for classification seems to appear: it has only to be observed, in general terms, that it is the full front lighting which is obviously of most account, and the extreme side lighting of least, the value of any intervening quarter being in proportion to its proximity to the front direction. The obstruction offered to Skylights is the only other kind which seems to require mention. Here the

angle of elevation of the summit is of course still the great consideration; but the form of the obstruction on plan is of no moment, or its direction, except as matter supplementarily of aspect.

Passing by, then, the less important peculiarities of other descriptions of lights, it is plain that the Wall-light and the Skylight are essentially different in respect of obstruction, the difference turning upon this: that the Wall-light, being exposed directly towards the horizon, derives its lighting mostly from the lower sky, the part which is of necessity the most obstructed; whilst the Skylight, being exposed directly to the zenith, derives its lighting mostly from the upper sky, the part which is of necessity the least obstructed. Accordingly, *primâ facie*, it is easy to damage a Wall-light, and difficult to damage a Skylight, except, in both cases, when circumstances are peculiar.

PART III.

THE MEASUREMENT OF WINDOW-LIGHT, AND THE PROOF
OF ITS DIMINUTION AND DAMAGE.

WE have now to endeavour to work out a scheme for the measurement of lighting power; and there seems no reason why this task should not take the shape of the problem how to determine, on definite principles, in any case whatever of obstruction, the precise amount of illumination which has been hitherto obtained, and the precise portion thereof which will be now intercepted.

Figure 1 represents the horizontal Plan of a common wall window under the influence of diffused light

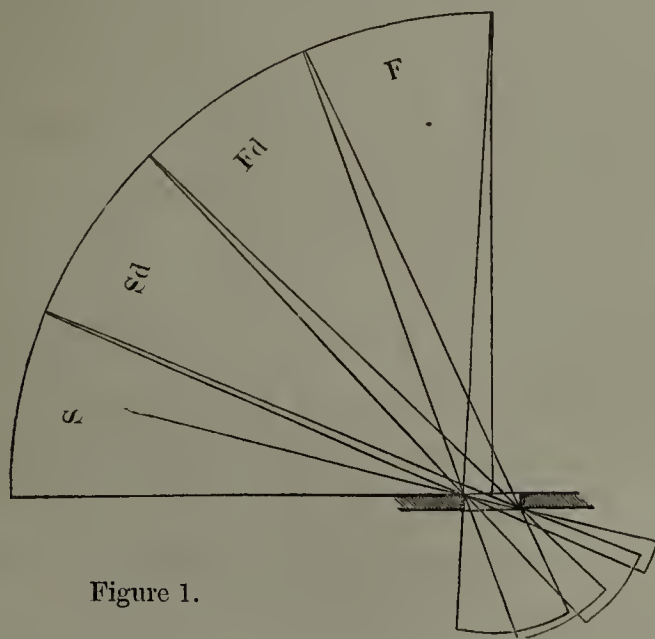


Figure 1.

all around. The manner in which such light is received is equivalent to the convergence of rays from a vast reflector semicircular on plan (its sectional form to be considered afterwards), surrounding the window as a centre in the manner represented. Now let each quadrant of this semicircle be divided into four equal parts. (This division into *four* is amongst other things based upon the desire to preserve in our scheme the “angle of 45 degrees,” which has long been used by surveyors as a test of damage to light; and as we proceed, it will be important incidentally to ascertain what are the facts with regard to this.) The four parts of the quadrant let us call respectively the *Front*, the *Front-diagonal*, the *Side-diagonal*, and the *Side*, as so many quarters of access for light; and let us inquire what comparative value ought to be put upon each of these as regards the amount of lighting received from it. The lines on the diagram which are drawn through the window from each quarter will be readily understood by draughtsmen, and the comparative quantities of lighting (the proportion of window width to wall-thickness being put at an ordinary average) will be found to be very nearly thus:—Front 61, Front-diagonal 58, Side-diagonal 53, and Side 18; and our conclusion thus far is that, taking any obstruction according to the position it would occupy on a plan of this kind, its effect would be according to the value thus belonging to the portion of the semicircle of lighting actually obstructed, subject to further considerations to be set forth.

Turning now to Figure 2, this represents a vertical Section of the same Wall-window under the

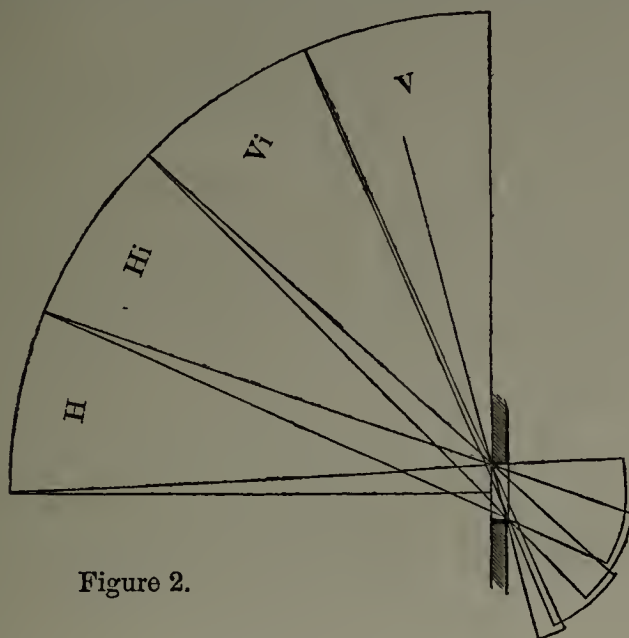


Figure 2.

influence of diffused light from horizon to zenith. The quadrant is divided into four, as in the former diagram of plan; and we take leave to designate the parts by the names *Vertical*, *Vertical-inclined*, *Horizontal-inclined*, and *Horizontal*. The value of lighting power, as regards mere quantity, will correspond with the former figures—namely, Horizontal 61, Horizontal-inclined 58, Vertical-inclined 53, and Vertical 18; but let it be borne in mind that these are values of supposed equal areas of surface at the several quarters of elevation respectively.

But these last results must be immediately modified by another consideration. If we apply the Plan (Figure 1) to this Section, and suppose the reflecting surface to be the hollow half-hemisphere thus produced, and if we suppose it to be divided crosswise

by horizontal and vertical lines drawn through the formerly accepted points of division, it is obvious that, although the horizontal lines will be parallel, the vertical lines will incline together upwards and meet at the zenith. It consequently follows that, in order to apply the above values of supposed equal areas at the different quarters of elevation to the actually unequal areas of the accepted divisions of our half-hemisphere, it becomes necessary simply to reduce each division to a proportional value at these rates respectively, according to the actual size of the particular division. There is no difficulty here, and it will be found that the Horizontal division will be 59; the Horizontal-inclined, $47\frac{1}{2}$; the Vertical-inclined, $29\frac{1}{2}$; and the Vertical, 6; these figures referring now to the successive segments of elevation at their actual size.

Lastly, multiply these values of elevation systematically into the values of plan (Figure 1), and the following table (in round numbers) is the result. The table is in fact a presentment of the hemisphere of lighting surface of any wall-window, divided in our accepted manner into four equal quarters horizontally each way from front to side, and four equal quarters vertically from horizon to zenith; and any case of obstruction has only to be "projected" upon a diagram of this form, and the measurement of lighting power is rendered simple and reliable.

TABLE OF LIGHTING FOR A WALL WINDOW.

(Zenith)	(Centre.)										Totals.
	(Equal divisions of Quadrant.)					(Equal divisions of Quadrant.)					
	Side.	S. diagonal.	F. diagonal.	Front.	61	58	53	18	Side.		
					Front.	F. diagonal.	S. diagonal.	Side.			
Vertical (6) 1	$\frac{1}{2}$	1	1	$1\frac{1}{2}$	$1\frac{1}{2}$	1	1	$\frac{1}{2}$		8	
V. inclined (29 $\frac{1}{2}$) 5	2	6	7	7	7	7	6	2		44	
H. inclined (47 $\frac{1}{2}$) 8	3	10	11	12	12	11	10	3		72	
Horizontal (59) 10	4	13	14	15	15	14	13	4		92	
(Horizon)											
Totals ...	9 $\frac{1}{2}$	30	33	35 $\frac{1}{2}$	35 $\frac{1}{2}$	33	30	9 $\frac{1}{2}$		216	

An examination of the totals will prove interesting, showing the value of each entire quarter, whether vertically or horizontally, as compared with the aggregate and with each other. The position of the angle of 45 degrees, as matter of lighting value, is also to be seen clearly. Taking this angle vertically all around the semicircle, it seems that the value of

light above the limit is 52 measures, and below the limit 164. Taking the angle laterally and throughout the entire height to the zenith, the total in each quadrant in front of the limit is $68\frac{1}{2}$ measures, and at the side beyond it $39\frac{1}{2}$.

There are certain seeming defects in this table which must be explained, although it may be premised that none of them are such as to mislead any one accustomed to geometrical drawing.

First, there is an apparent diminution of lighting power as the angle of elevation increases. This arises from the actual diminution of lighting surface comprised in the upper divisions, owing to the inclination of the vertical lines. To illustrate this the dotted lines represented in one of the columns of the table will be quite enough.

Secondly, there may be an apparent difficulty here involved as regards what draughtsmen call the "projection" of a case of lighting upon this diagram. The difficulty however is not real. The practice of perspective drawing, as is well known, recognises diminution by distance horizontally, *but not vertically*; and this corresponds exactly with the form of the table. Perspective drawing of its kind is all the projection that is needed, taking for the point of sight either the centre of the window for the question of general lighting, or any special point inside for a question of particular lighting, and making the plane of the picture that of the window, or a substitute parallel thereto, according to the point of sight assumed.

Thirdly, we must point out that the apparent difficulty of subdividing our accepted divisions in value, to correspond with that subdivision of their areas which must continually be necessary in the practical application of the diagram, is a thing which may very safely be left in the hands of the surveyor, who will of course follow out the obvious principle that the precise values set down in figures in the table are the proportional values of the central part of each division, modified in each direction according to the value of the division next adjoining in such direction.

For the case of *Skylights* a separate table has to be made. Referring again to Figure 2, we start with the figures formerly arrived at as representing comparative quantity of lighting power; namely, Vertical, 61; Vertical-inclined, 58; Horizontal-inclined, 53; and Horizontal, 18: these being, as before, the values pertaining to equal areas. We then reduce these quantities to meet the diminishing width of column from horizon to zenith, and they become 12, 33, 44, and 17 respectively. But it will be obviously desirable to reduce these proportions to numbers which shall correspond with our former table for wall-windows.

The simplest way to proceed seems to be on the ground that the sum of the Vertical-inclined and Horizontal-inclined divisions of one quarter of plan

($22\frac{1}{2}$ degrees) of skylight lighting must obviously be equal to the sum of the Vertical-inclined and Horizontal-inclined divisions of the *Front* quarter of wall-window lighting, because in both cases the light is the same 45 degrees by $22\frac{1}{2}$, with the same central point thereof at an angle of 45 degrees from the window,—so that it is immaterial in that one case whether the window be in a level ceiling or in an upright wall. The following table (in round numbers) is the result; the equation in question being $8 + 11 = 7 + 12$, which is right.

TABLE OF LIGHTING FOR A SKYLIGHT.

	(Zenith.)				
Vertical, 12	Equal divisions of Quadrant.	3	3	3	The same round the entire circle.
V. inclined, 33		8	8	8	
H. inclined, 44		11	11	11	
Horizontal, 17		4	4	4	
	(Horizon.)				
		16 equal divisions of Circle.			

The question of the angle of 45 degrees in this case stands thus: to whatever extent the hemisphere of sky is obstructed to this angle vertically, to such extent there are 11 measures retained and 15 lost.

The dotted lines in one of the columns show

as before the diminution of width ; and, as before also, the table will of course apply only to matters delineated vertically ; an obstruction, for instance, overhead would have to be treated specially,—but such a necessity would seldom if ever occur.

We have as yet, however, got no farther than the calculation of lighting power as regards the mere proportional access of light to a window ; it is obviously necessary to consider now what has to be done in order to apply this to any given case of the lighting of a certain space within. In a word, we must look into the question of the proper proportion which window space ought to bear to the size of the apartment lighted. Or, to put the matter once more, and in special relation to Easements, by what means is the surveyor to determine, in any particular case, not how much light is obstructed (because this is not the point at issue), but how much the lighting power has been reduced below the necessities of the Easement ?

Now here it would be vain to attempt the establishment of rules to apply to all cases ; the surveyor must judge for himself, according to the circumstances of the Easement, what are its necessities ; but we can at any rate lay before him principles for his consideration, in order that his judgment may be founded on an intelligent and intelligible reckoning, and not formed at haphazard.

Obviously the most serviceable basis must be that of the usual size of windows in London houses ; and it will probably be recognised by most practical observers that an ordinary room, 20 feet by 15 feet, lighted by two windows of ordinary height, 3 feet wide in the glass, and the light received at the angle of 45 degrees all along the front indefinitely (for example, a ground-floor window in a street whose width equals the height of the houses), is a common case, in which the amount of light is barely sufficient for ordinary residential purposes,—an instance therefore of *the standard minimum of necessary lighting*. Now the value of a window is of course in several ways directly as the size of the window, and inversely as the size of the room ; but if we be content to take as standard conditions, that the sill is about $2\frac{1}{2}$ feet from the floor and the head about 1 foot from the ceiling (and leave exceptional cases to be treated exceptionally), this will divest our calculations of considerable complication, which would otherwise arise from varieties of height, both of window and room. On this basis, therefore, let us suggest the following scale of widths of window-space with corresponding dimensions of rooms, at random proportions, heights being immaterial, and the angle of light in all cases being 45 degrees along the front indefinitely. Any one can form an opinion whether they are reasonable, and probably most persons will agree that they are so.

Total Window space 3 feet wide; Room 12 feet by $12\frac{1}{2}$ feet.

„	4	„	„	16	„	$12\frac{1}{2}$	„
„	5	„	„	17	„	$14\frac{1}{2}$	„
„	6	„	„	20	„	15	„
„	8	„	„	20	„	20	„
„	10	„	„	25	„	20	„
„	12	„	„	30	„	20	„

It is easy to see that in each instance the area assigned to the room is at the rate of 50 feet to one foot wide of window: that is to say, in ordinary cases, one foot of window-width (of standard height) to 50 superficial feet of floor, with the lighting intercepted at 45 degrees along the front indefinitely, we take as a minimum of domestic light; and it may be added, that it seems of little moment for our purpose what may be the shape of the room or the position of the windows.

Now, if this be accepted, the mode of ascertaining the exact amount of injury to any Ancient Light seems easy enough. Suppose an apartment 20 feet square is lighted by a window of the standard height, 8 feet wide (as the minimum size by our estimate above), what amount of lighting does this represent? The diagram, Figure 3, represents in

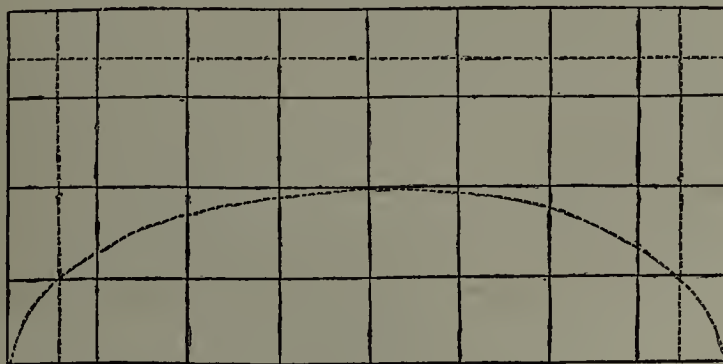


Figure 3.

block the Table of Lighting for a Wall-window on our accepted system of division, and the elliptical line is the projection of the interruption of light at the angle of 45 degrees along the front indefinitely. The result is, that the amount of lighting power left is 68 measures out of the extreme total of 216: so that a window-width of 1 foot to 50 of floor requires 68 of our measures of lighting-power as its minimum. Now suppose the window-space, instead of being 8 feet wide, is 9 feet, still retaining the 68 measures of lighting power, what obstruction can be allowed without damage? The answer is, so many of our measures of lighting power as may be found to correspond with the excess of 1 foot of width. If 8 feet requires 68 measures, 9 feet requires only $60\frac{1}{2}$ measures: $7\frac{1}{2}$ therefore can be sacrificed, in no matter what quarter, without injury; and if an intended obstruction exceeds $7\frac{1}{2}$ measures in value, the surveyor may consider it *proved* that there is a definite damage to the necessary light of the window.

Suppose again that an Ancient Light, in a room 30 feet by 30, is 10 feet wide, and that the projection upon our Table of Lighting shows for the original extent of lighting surface the value of 120 measures, and that an obstruction of 20 measures is proposed. At 1 foot of window-width to 50 of floor, and at 68 measures of lighting power, this room ought to have 18 feet of window-width; and if 18 feet would require 68 measures, 10 would require $124\frac{1}{2}$; so that, instead of possessing any superfluity,

the Light is already $4\frac{1}{2}$ measures below the minimum of necessity, and no obstruction can be allowed.

Suppose once more that a room, 15 feet by 30, has half-a-dozen windows, exceptional in form, which are estimated to be equivalent to three of standard conditions 4 feet wide, in all 12 feet of window-width; and that the lighting-power has hitherto been 90, of which it is proposed to obstruct half, and this altogether at the sides, so as to leave the front open. They have such abundance of light, says the opposite neighbour, that it is practically impossible to diminish it at all, especially at the sides. Now 15 feet by 30, at 50 feet to 1, requires 9 feet of window-width, at 68 measures of light; and the actual amount possessed is 12 feet at 90 measures. It is easy to reckon that this 12 feet requires only 51 measures; there is, therefore, 39 measures to spare. But the obstruction is to be 45 measures; it ought, therefore, to be reduced by 6.

The case of a Skylight has now to be taken up. It may be treated on the same principles already laid down, but it must be on other data. The minimum of necessary lighting must first be established, and this, as in our former case, will be best associated with what may be called average conditions. The following form of question will perhaps be accepted:—What proportion ought the skylight to bear to the area of floor, with the light intercepted all around at

45 degrees on the average? We must suppose the skylight to be of clear glass, and directly open to the sky—in short, so far, the counterpart of the common wall-window of former consideration; and it has to be remembered, as before, that it is ordinary domestic lighting which constitutes the primary legal standard of use; all forms of obscured or indirect lighting, and all uses other than domestic, being matters for allowance specially.

The amount of lighting-power which is left in the sky when the entire circuit is obstructed up to the angle of 45 degrees, is obviously (see our table, page 42) sixteen times $8 + 3$ measures, that is 176. The lighting-power of our standard wall-window, obstructed at 45 degrees along the front, was 68. Now the average height of a wall-window is about 7 feet; so that the one foot of window-width of our former investigation means 7 square feet of window-area (if properly disposed) as the allowance for 50 feet of floor. Consequently, to find what floor-area we ought to allow per square foot of skylight, we have the question thus: 7 square feet at 68 measures per foot is to 1 at 176 measures as 50 feet of floor is to the answer, namely, about $18\frac{1}{2}$ feet of floor; indeed, on account of the greater facility of sky-lighting, we may say 20 feet. To test this result practically, the following instances will suffice:—

One Skylight	3 feet by 3;	Room	12 × 15
„	4 „ 4;	„	16 × 20
„	5 „ 4;	„	20 × 20
Two Skylights	6 „ 5;	„	40 × 30
Three „	5 „ 5;	„	60 × 25

Are these dimensions satisfactory, then, for flat skylights of clear glass, set within about 18 inches of the ceiling, obstructed at 45 degrees all around, and considered as barely sufficient for domestic purposes? Most persons of experience will probably come to the conclusion that, on the whole, they are; and that our rule, therefore, may assign 1 foot to 20 of floor, under the conditions stated, as a basis to work upon,—all exceptional cases to be treated specially.

As an illustration of the application of this rule to the measurement of diminished lighting, let us suppose a room 20 feet square, with a clear skylight in the ceiling 6 feet by 5 feet, and so much sky unobstructed as to be of a lighting power of 120 of our measures,—not an uncommon kind of case,—how much, if any, may this be further obstructed? For 20 feet by 20, at 20 feet to 1, the skylight, if it had 176 measures, ought to be of 20 feet in area. Instead of this, it is 30 feet in area. For this size it requires 117 measures, which is very close upon the 120 possessed.

Again, a skylight 6 feet square, having a short well or shaft between roof and ceiling, and being covered with wire netting, lights a room only 12 feet by 15, but so surrounded by lofty walls (the average angle being $67\frac{1}{2}$ degrees) that the tabular lighting-power is only 48 measures, which is proposed to be diminished still further to a slight extent by means of an overhanging cornice,—what follows? Say the allowance for the shaft (by a diagram) and the wire-work (by measurement of it) is one-tenth. Then 12 feet by 15, at 176 measures, requires 9 feet of clear

open skylight. Call this 10 feet, and the allowance for partial obscuration is satisfied. This 10 feet, then, at 176 measures, is equal to, at the 48 measures possessed, what? As much as 37 feet. Although, therefore, the skylight is so large as it is in proportion to the room, yet, as its area is only 36 feet, it must not be interfered with even by so small a matter as the overhanging of a cornice.

Having now arrived at these definite rules, it becomes necessary to explain various points affecting their application.

The *Position of a Light internally* is presumed in our calculations to be such as to distribute the lighting reasonably well throughout the apartment in question. Therefore, when reference is made, for instance, to a room 30 feet by 20, with 12 feet of wall window-width, or 60 by 20, with so much skylight-surface, it is intended that the light should be not in one, but efficiently divided. Any case of the contrary must be treated specially.

Exceptional cases must continually arise;—windows in thick walls; recessed windows; those that are higher, lower, broader, or narrower than the usual proportions, or otherwise out of standard form; windows partially obscured, and so on: in such cases the Surveyor must, of course, refer to our first prin-

ciples, and follow them out as we have done, in whatever direction, or under whatever restrictions, the occasion may require. In a multitude of ordinary cases of the diminution of lighting-value through customary obscuration by its owner, all that the Surveyor need do is to estimate the amount of diminution (after the manner of our example of the skylight only a few lines back) in the form of a definite percentage on the standard capabilities of an unobscured light. Special diagrams, also, will settle many questions in a way not to be controverted.

The *round numbers* in which our tables and our calculations generally are given must be looked upon, not with distrust, but as evidence of the author's aim to be practical in his results. No fear need be entertained of *fractional difficulties*; they will not be found to arise in any business-like form, and mathematical precision generally would be more embarrassing than otherwise to practical men.

The *effect of distance* must not be forgotten; inasmuch as, the more remote the impediment is, the angle of obstruction being the same, the more does the influence of diffusion tend to countervail the effect. It is always best, however, to leave all such questions to be dealt with after the standard result is arrived at; and, in this particular matter, it must be remembered that it is only a very considerable distance which can be of any palpable moment.

The question of the *Reflection of Light* from an

opposite wall of bright colour will sometimes be raised. The Surveyor must judge for himself; but he ought generally to refuse to recognise anything of the sort, although in some very special circumstances he may trust himself to take the idea into consideration. As a rule, any such reflection, to be of practical value to an easement, would require to be maintained under some legal obligation, which is usually impossible. At the same time, due acknowledgment must be accorded to the fact that the effect of bright reflection is really to augment the quantity of light received, and this in a plain and practical sense.

There is one kind of reflected light which must be mentioned, although it is very seldom that its appreciation will come actually into a question of measurement. When the interception of the sky-surface reaches the full limit of the tables (that is, when no sky is visible at all—a question of wall thickness in a measure), the result is not darkness, but there is left only such light as may be reflected from surrounding walls. A case of this kind would of course be very exceptional indeed, but there need be no real difficulty in dealing with it by special diagram, apart from the fact that on the face of it such a case would be one of so little light as to render diminution without injury impossible, and measurement therefore superfluous.

Aspect must also be matter for consideration; in fact, no estimate of alleged damage to light can be complete without this. For it is a fundamental prin-

ciple in dealing with Easements of Light that it is when the atmospheric lighting is weakest that the injury is to be most reliably appraised; and as the law recognises no exceptional kind of weather, such as fog, and no inconsiderable time of day, such as twilight,—but looks rigidly to the common enjoyment of atmospheric light within such limits of time as are usual during some considerable part of the year, it is obviously *the general decline of day in winter* which is the legal test in this respect. And that the effect of aspect, even in moderately dull weather, at that time of day is considerable, no one can pretend to doubt. It must be a rule for the Surveyor, therefore, after having measured the diminution of lighting power in the abstract, that he must duly allow for the particular aspect. So much as the obstruction is westward, so much does its effect, at the decline of day in dull weather, become of the nature of a direct screen placed before the source of light at the time when there is least light to spare; and so much as it is eastward, so much does its effect become that of a screen away from the light. But there must not be too much allowance made on this score. The more dull the weather, the more equally diffused is the light; and it is moderately dull weather that furnishes the legal test. And again, it cannot be disputed that, if there be any portion of visible sky-surface obscured, in whatever direction, there is a portion of the great hemispherical reflector of light obscured; so that the allowance for aspect is a thing

to be only ventured upon with care and special consideration of the case in hand.

Diagrams showing the effect of a sort of special sunshine cast at an assumed angle (generally that of 45 degrees) are not to be relied upon. Another class of diagrams, based upon lines drawn from the Easement Light to the old and new heights respectively of the servient building, are correct so far; in fact, they are of identical principle with our tables, but they are not of much real service except it be to present a case to the eye of some one who cannot otherwise understand it. The most conclusive of all drawings must be simply a divided representation of the sky-surface, with the old condition of things and the intended condition contrasted thereon, and the valuation of lighting power figured square by square.

The *variety of purpose* pertaining to the use of Easement Lights, as a consideration of value, has already been spoken of (page 27); but it is necessary to venture upon some sort of suggestion as regards the element of commercial appreciation involved in the question. The legal standard applied to an easement of light being primarily derived from the necessities of domestic use, it will probably always be best for the Surveyor, however peculiar a case may be, to base his consideration of it upon this datum, and to leave all peculiarities of purpose to be matter of sub-

sequent allowance. For instance, suppose a wall-window in question gives light to a counting-house or clerks' office closely set with writing-desks; having calculated the measurements of lighting power by the Tables, the surveyor then argues thus: so much for the standard of domestic occupation; but for the purposes of actual use the amount of lighting power required is so much more than this standard, and therefore the nominal result must be modified so and so. This will perhaps always be better than any sort of introduction of a counting-house standard earlier in the investigation. Again, say a skylight lights a sample-room, or a show-room; the standard only determines what is required for a domestic library or a kitchen, or some other such residential apartment; an allowance on the result must therefore be made, to correspond with the greater necessities of the sample-room or the show-room. There is also a general idea to be kept in mind thus: whether the lighting required is a certain amount diffused throughout a certain space, or a certain amount more or less concentrated on a certain spot, perhaps also in a certain precise direction. It must be plain that all this is matter, not so much for measurement by a Surveyor as for appreciation by ordinary persons, under his guidance perhaps, but no more.

The *re-adjustment of obstructed Lights* by consent between the parties becomes an easy matter by application of the Tables. Skylights, for instance, afford the best example of what can be done. A skylight

easement is proposed to have its *lighting power* reduced exactly so much below its proved necessities; what augmentation of *size* will compensate for this is easily ascertained, and there is no doubt that the mutual consent of parties in such a case would be seldom difficult of attainment. As regards wall-windows the difficulty is somewhat greater, but not much; augmentation of size need rarely fail to be made the means of equitable readjustment.

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